## Rec'd PCT/PTO 24 JAN 2005

(12) INTERNATION

PLICATION PUBLISHED UNDER THE PATEN



(19) World Intellectual Property
Organization
International Bureau



## 

(43) International Publication Date 29 January 2004 (29.01.2004)

**PCT** 

(10) International Publication Number WO 2004/010529 A1

(51) International Patent Classification7: H01Q 1/12, 7/00

(21) International Application Number:

PCT/GB2003/003260

(22) International Filing Date: 24 July 2003 (24.07.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 0217157.7

24 July 2002 (24.07.2002) GB

(71) Applicant (for all designated States except US):
HARADA INDUSTRIES (EUROPE) LIMITED
[GB/GB]; Bell Heath Way, Woodgate Business Park,
Clapgate Lane, Birmingham B32 3BZ (GB).

(72) Inventors; and

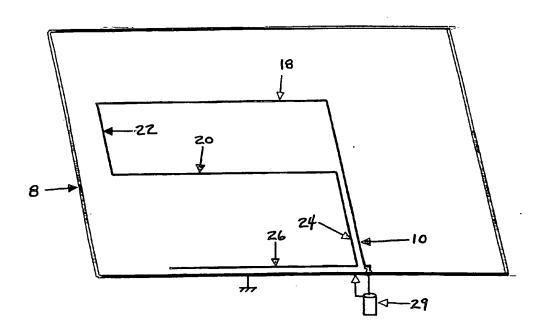
(75) Inventors/Applicants (for US only): LEELARATNE, Dedimuni, Rusiru, Vinodaka LKGB]; 55 Tunstall Road, Canterbury, Kent CT2 7BX (GB) CALLAGHAN,

Peter [GB/GB]; 2 Kilndown Gardens, Canterbury, Kent CT2 7TY (GB). RANDALL, John [GB/GB]; 15 Charles Drayson Court, Javersham, Kent ME13 8BB (GB).

- (74) Agents: MOIR, Michael, Christopher et al.; Mathys & Squire, 100 Grays Inn Road, London WC1X 8AL (GB).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: INTEGRATED LOOP ANTENNA FOR VEHICULAR APPLICATIONS



(57) Abstract: A vehicular screen antenna includes a conductor extending on a dielectric, such as a window. The conductor is configured as a loop having entry and exit segments, the loop being positioned generally centrally on the dielectric. The entry and exit segments extend proximate each other from the loop towards a first edge of the dielectric and are oriented on the dielectric so as to extend generally vertically when the dielectric is fitted to a vehicle.



## Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



PC U3/03260

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01Q1/12 H01Q7/00 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 H01Q Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the International search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. X . US 6 160 518 A (SHIBATA NAOKI 1-6, 12 December 2000 (2000-12-12) 14-16 18,19 Y abstract; figure 2 figure 5 10-12 X X EP 0 806 808 A (HARADA IND CO LTD) 1-6, 12 November 1997 (1997-11-12) 14-16 18,19 page 4, line 42,43 EP 0 854 533 A (FORD MOTOR CO) 18,19 22 July 1998 (1998-07-22) figure 1 1-5,14, X US 5 565 876 A (MURAKAMI HARUNORI ET AL) 15 October 1996 (1996-10-15) 15,17 the whole document Further documents are listed in the continuation of box C. Patent family members are listed in annex. X Special categories of cited documents: "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) Involve an inventive step when the document is taken alone document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu-'O' document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled in the art. document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the International search report 27/10/2003 6 October 2003 Authorized officer Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 Marot-Lassauzaie, J

## INTERNATIONAL SEARCH REPORT

ation on patent family members

PC u3/03260

Patent document		Publication		Patent family	Publication
cited in search report		date		member(s)	date
US 6160518	A	12-12-2000	JP	2000307321 A	02-11-2000
EP 0806808	A	12-11-1997	JP	9298413 A	18-11-1997
			EP	0806808 A2	12-11-1997
			US	5949381 A	07-09-1999
EP 0854533	А	22-07-1998	US	5883599 A	16-03-1999
			DE	69702591 D1	24-08-2000
			DE	69702591 T2	19-04-2001
			EP	0854533 A1	22-07-1998
			JP	10209731 A	07-08-1998
US 5565876	Α.	15-10-1996	NONE		